Technological Capital, Liquidity, and Board Size: Impact on Firm Value

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ABSTRACT

This study explores the impact of technological capital, the current ratio, and the board of commissioners on the firm value of companies listed on the jakarta islamic index (jii) over the period from 2019 to 2023. A total of 75 annual reports were selected using purposive sampling. A quantitative research design is employed, using panel data from 16 companies selected through purposive sampling based on specific criteria such as availability of consistent financial reports, financial stability, and membership in the jii. The study uses technological capital disclosure, the current ratio, and the size of the board of commissioners as independent variables, with firm value, measured by the price to book value (pbv) ratio, as the dependent variable. Data are analyzed using eviews version 10. The findings reveal significant relationships between technological capital disclosure and firm value, underscoring the importance of technological adaptation and the technological educational background of the board of directors. This study contributes to understanding the dynamics of technology-driven strategies and governance in enhancing firm value in the context of indonesian islamic capital markets.

1. Introduction

One of the primary objectives of a company is to maximize shareholder value, which can be achieved through improved financial performance. Financial performance is reflected in the company's financial statements, which provide essential information regarding profitability. This information is crucial for various stakeholders, including investors, shareholders, and management. This is particularly relevant in the context of the technology industry, which has garnered significant attention from investors due to its high growth potential. The technology sector encompasses various areas such as e-commerce, information technology services, and digital banking, all of which are considered key components in driving economic development in the era of the Fourth Industrial Revolution. [1]

The rapid advancement of technology in the current era of disruption requires companies to adapt swiftly in order to maintain relevance and competitiveness in the market. In the context of the transition from Industry 4.0 to 5.0, organizations are expected to innovate not only in operational processes but also in formulating adaptive and sustainable business strategies. Technology has become a critical element in ensuring corporate sustainability and success, particularly in meeting the growing expectations of consumers for more efficient and digitally-driven services. [2]

Liquidity reflects a company's ability to meet its short-term financial obligations as they become due. The level of liquidity can influence the amount of dividends distributed to shareholders. Since dividends represent a cash outflow, a higher level of available cash indicates better liquidity, thereby enhancing the company's capacity to pay dividends.[3]

The role of independent commissioners in corporate activities has a significant impact on strategic decision-making, which in turn affects the company's financial performance. Investor assessments of firm value are often reflected in stock prices; higher stock prices generally indicate a positive perception of a company's value. A high firm value not only signifies strong current performance but also reflects positive future growth prospects. Previous studies have identified several factors that influence firm value, including financing decisions, dividend policy, investment activities, growth rate, and firm size. [1]

In formulating a comprehensive approach to firm valuation, it is essential to consider the role and composition of the Board of Commissioners. As the primary supervisory body within a company, the Board plays a strategic role in guiding corporate policy and setting the long-term direction of the organization. The selection of competent board members with diverse backgrounds can significantly contribute to corporate sustainability and the creation of long-term value. [4]

Firm value represents the performance of an entity as reflected in its stock price, which is determined by the interaction of supply and demand in the capital market and simultaneously reflects public perception of the company's performance. Firm value is a key factor considered by investors in their investment decision-making process. To attract investor interest, companies expect financial managers to take optimal actions aimed at maximizing firm value, thereby enhancing shareholder wealth. An increase in firm value also contributes positively to the company's reputation among prospective investors.[5]

Research Objectives/Research Hypotheses:

This study aims to analyze the factors influencing firm value with a particular focus on technological capital, financial performance, liquidity, and the composition of the Board of Commissioners in maximizing firm value. By understanding these factors, companies are expected to formulate more effective strategies to navigate the dynamics and challenges of the Industry 5.0 era.

1.1 Background

In today's competitive business environment, one of the primary goals of a company is to maximize shareholder value, which is largely driven by improved financial performance. Financial statements provide critical insights into a company's profitability, serving as an essential source of information for investors, shareholders, and management. This is particularly pertinent in the technology sector, which has attracted significant investor interest due to its rapid growth potential. The technology industry, encompassing e-commerce, IT services, and digital banking, plays a crucial role in driving economic development in the era of the Fourth Industrial Revolution.

The rapid pace of technological advancement and market disruption demands companies to swiftly adapt and innovate, not only operationally but also strategically, to maintain relevance and competitiveness. The transition from Industry 4.0 to Industry 5.0 intensifies this need for innovation with an emphasis on sustainability and adaptive business models. In this context, technological capital has become a vital resource for corporate sustainability and success,

enabling companies to meet increasing consumer expectations for efficient and digitally-driven services.

Liquidity, reflecting a company's ability to meet short-term obligations, is another critical factor influencing financial health and dividend distribution capacity. Additionally, the role of independent commissioners as strategic supervisors significantly affects corporate governance and decision-making, which in turn impacts firm value. Firm value, often measured through stock prices, embodies both current financial performance and investor expectations for future growth, making it a key consideration for investment decisions.

Despite extensive research on factors influencing firm value, there remains a need to explore how technological capital, liquidity (proxied by current ratio), and the composition of the Board of Commissioners collectively impact firm value, particularly within the context of companies listed on the Jakarta Islamic Index during the Industry 5.0 transition period.

1.2 Problem Statement

While prior studies have examined various determinants of firm value such as financing decisions, dividend policy, and board characteristics, limited research has specifically investigated the combined effects of technological capital, liquidity, and board composition on firm value within Islamic-compliant companies. Furthermore, the dynamic and disruptive nature of the technology-driven Industry 5.0 era presents unique challenges and opportunities that have not been fully addressed in existing literature. This gap creates uncertainty about how these critical factors interact to influence firm value in companies listed on the Jakarta Islamic Index from 2019 to 2023. Addressing this knowledge gap is essential for guiding corporate strategies and governance practices that enhance shareholder wealth and ensure long-term sustainability.

1.3 Objectives and Scope

This study aims to analyze the influence of technological capital, financial performance (through liquidity measured by current ratio), and the composition of the Board of Commissioners on firm value among companies listed on the Jakarta Islamic Index during the period 2019-2023. Specifically, the research objectives are:

a. To assess the impact of technological capital on firm value.
b. To evaluate the role of liquidity, as represented by the current ratio, in influencing firm value.
c. To examine how the composition of the Board of Commissioners affects firm value.

The scope of this research is limited to firms listed on the Jakarta Islamic Index, which comprises companies that adhere to Islamic principles, over the five-year period from 2019 to 2023. This temporal and sectoral focus allows for a detailed examination of the variables in the context of emerging Industry 5.0 trends and the unique governance structures within Islamic finance-compliant corporations.

2. Literature Review

In this study, two primary theories are employed to explain the influence of technological capital on firm value. These are Signaling Theory and Disruptive Innovation Theory, which together provide a comprehensive framework for understanding how the disclosure of technological information can shape investor perceptions of a company.

2.1 Signaling Theory

Signaling Theory offers a conceptual framework for understanding how information

disclosure acts as a signal that reduces information asymmetry between the sender and the receiver. According to this theory, companies send signals to external parties, such as investors, by revealing specific information intended to mitigate information gaps and uncertainty. Through these signals, firms aim to convey their true value and prospects, thereby influencing investor decision-making. [6]

In this context, disclosure of a company's technological capital can serve as a positive signal to investors, indicating the firm's potential to sustain and grow amidst rapid technological disruptions. Consequently, investors are more likely to value companies that demonstrate the ability to innovate and adapt to the latest technologies. Signaling theory explains that management's actions in communicating information to investors can significantly influence their evaluation of the company's current condition and future prospects. Appropriate disclosure enhances the company's credibility and transparency, thereby helping to reduce investor uncertainty.[7].

The quality and integrity of information presented in financial reports play a crucial role in conveying such signals. High-quality information helps bridge the information asymmetry between management, acting as agents, and capital owners, as principals. This is particularly important since management typically has greater access to internal information and the company's future prospects.[7].

When information is released, market participants initially interpret it as either a positive or negative signal. Financial performance is often reflected through the data contained in financial statements. If the information is perceived as a positive signal by investors, it is likely to lead to an increase in stock returns.[8]

2.2Disruptive Innovation Theory

The Disruptive Innovation Theory provides insights into how new innovations can transform established market structures and create value that differs from conventional approaches. Originally proposed by Clayton M. Christensen, this theory explains that disruptive innovations often originate in overlooked market segments and gradually gain traction by offering simpler, more affordable, and more accessible solutions compared to existing products or services. [9]

Although disruptive innovations are often initially overlooked or deemed unprofitable by established firms, they possess the potential to dominate the market over time, even replacing long-standing flagship products. If incumbent companies fail to adequately anticipate and respond to this disruptive phenomenon, they risk losing competitiveness and market share.[9]

In the context of an increasingly dynamic business environment, a company's ability to adopt and implement disruptive innovation is a key indicator of its competitive advantage. Firms that are responsive to technological changes are perceived as more adaptive and future-oriented. This, in turn, sends a positive signal to investors regarding the company's long-term growth prospects. As such, the effective management and adoption of disruptive innovation directly contribute to enhancing firm value.

One important factor that reflects a company's readiness to face technological disruption is the disclosure of its technological capital. Technological capital encompasses various forms of technology-related assets, including investments in research and development, digital infrastructure, and the innovation strategies employed by the company.

Disruptive Innovation Theory suggests that innovations initially perceived as simple or unattractive by the market can evolve into transformative forces that replace existing systems or technologies. These innovations typically offer greater efficiency, lower costs, and improved accessibility.

In terms of technological capital, companies that proactively adopt new technologies have the potential to become industry changemakers. This capability offers a competitive edge that can strengthen the firm's market position. For companies listed on the Jakarta Islamic Index (JII), the adoption of disruptive technology—while remaining compliant with Sharia principles—not only reflects an innovative spirit but also demonstrates a strong commitment to sustainable growth. This serves as a positive signal to investors, enhancing their perception of the company's long-term potential and ultimately contributing to increased firm value.

2.3 The Concept of Technological Capital

Technological capital is an intangible form of capital that reflects the value embedded in a company's knowledge, skills, and capabilities to manage, develop, and leverage technology in order to enhance operational efficiency, drive product innovation, and create added value. The concept has historical roots in the wage disparity observed during the 1980s, when a significant income gap emerged between workers with technological skills and those relying primarily on manual labor. This gap widened further with the advent of new technologies that directly replaced many physical and manual jobs previously held by low-skilled labor.

For instance, the introduction of technologies such as electricity and automated machinery revolutionized transportation and assembly tasks, marking a major shift in work structures and overall productivity. In this context, technological literacy became a critical factor—not only in facilitating industrial transformation but also in spreading technical knowledge and skills across society. This diffusion of expertise played a key role in driving broad social and economic change.

A particularly relevant historical example is the transformation undertaken by The Times newspaper in 19th-century England. By adopting steam-powered printing technology to replace manual printing processes, the newspaper was able to double its output in just one hour. This innovation vividly illustrates how the mastery and application of technology can significantly enhance efficiency, productivity, and organizational competitiveness.[10]

2.4 Liquidity (Current Ratio)

According to Agus and Martono (2011), the current ratio is the proportion between a company's current assets and its current liabilities. Liquidity ratios are used to assess a firm's ability to meet its short-term financial obligations. As noted by Weston, cited in Kasmir (2008:129), the liquidity ratio reflects a company's capacity to fulfill its short-term liabilities using its available current assets.[3]

2.5 Board of Commissioners

The Board of Commissioners typically consists of two main groups: independent commissioners and affiliated commissioners. Independent commissioners are individuals who have no ties to affiliated parties and play a key role in ensuring objectivity in the company's oversight processes. Regulations concerning the presence of independent commissioners have been in effect since July 1, 2000, as mandated by the Jakarta Stock Exchange.

According to these regulations, publicly listed companies are required to appoint independent commissioners in proportion to the shares held by minority shareholders. The rules also stipulate that independent commissioners must constitute at least 30% of the total members of the Board of Commissioners. The inclusion of independent commissioners is intended to enhance transparency, strengthen accountability, and safeguard the interests of minority shareholders.

2.6Firm Value

Firm value represents the price a potential buyer or investor is willing to pay for a company in the event of a sale. The normative objective of a firm is to maximize shareholder wealth.[11] Maximizing shareholder wealth can be achieved by enhancing the overall value of the firm. [3]

Identified Gaps and Need for Further Research

Despite the established importance of both technological innovation and corporate governance, few studies have examined the role of technological capital disclosure within the framework of Signaling Theory and Disruptive Innovation Theory, especially in Sharia-compliant firms or emerging capital markets. Furthermore, the moderating role of liquidity and governance variables (such as board independence) in this relationship remains underexplored.

2.1 Related Work

Several previous studies have examined the impact of technological capital disclosure, financial conditions, and corporate governance factors on various aspects of firm performance. The following is a summary of relevant studies that provide a foundational basis for the current research framework:

Z. Pane & L. Romel (2024)

Title: The Effect of Technological Capital on CEO Narcissism in Manufacturing Companies

This study explores the relationship between technological capital and CEO narcissistic behavior, showing that firms with higher levels of technological capital tend to attract more ambitious or narcissistic leaders. This research offers a psychological perspective on the utilization of technological capital, differing from the current study which focuses on firm value as the outcome rather than leadership characteristics.

Similarity: Both studies emphasize the role of technological capital.

Difference: The referenced study focuses on leadership psychology rather than firm value or financial factors.

Z. Pane & L. Romel (2024)

Title: The Effect of Technological Capital Disclosure on Manufacturing Companies' Employees

This research investigates the impact of technological capital disclosure on employee productivity and job satisfaction within manufacturing firms. It finds that transparency in technological information fosters employee confidence and facilitates adaptation to change.

Similarity: Both studies examine the influence of technological capital disclosure.

Difference: The referenced study focuses on internal employee responses, while the current research emphasizes market response and firm value.

ZI Pane, Y. Beng, & IC Wangsih (2024)

Title: Does Technological Capital Disclosure Provide Benefits for Companies?

This study directly investigates the benefits of technological capital disclosure on firm performance, finding that companies actively disclosing their technology assets attract greater investor interest and achieve higher market valuations.

Similarity: Both studies focus on the relationship between technological capital disclosure and firm value.

High Relevance: This study serves as an empirical foundation for testing similar relationships in the Jakarta Islamic Index (JII) context.

Difference: The referenced study does not consider moderating variables such as liquidity and board composition, which are core contributions of the current research.

IC Wangsih, ZI Pane, Y. Yohana, & N. Kalbuana (2024)

Title: The Effect of COVID-19 Disclosure and Cash Holdings on Profitability During the Pandemic

This study examines how firms manage information disclosure during crises and the role of liquidity in sustaining profitability. It underscores the importance of transparency and liquidity in shaping market perceptions and financial outcomes.

Similarity: Both studies analyze the role of public information disclosure and liquidity (cash/current ratio) on financial performance.
Difference: The referenced study focuses on profitability during a crisis period, whereas the current research measures firm value in a stable period (2019–2023).

Unique Contribution of This Study

This study distinguishes itself from prior research by integrating three key variables—technological capital disclosure, current ratio, and board of commissioners' structure—as predictors of firm value in companies listed on the Jakarta Islamic Index (JII) during 2019–2023. Additionally, it applies two theoretical frameworks—Signaling Theory and Disruptive Innovation Theory—simultaneously, which have not been previously combined in studies within the Sharia-compliant context in emerging markets like Indonesia.

2.2 Research Gap

Despite the growing recognition of the importance of technological innovation and corporate governance in enhancing firm performance, several notable gaps remain in the existing literature. First, while numerous studies have investigated technological capital disclosure and its influence on firm outcomes, few have examined this relationship specifically within the framework of Signaling Theory and Disruptive Innovation Theory. This theoretical integration is particularly scarce in research focused on Sharia-compliant firms or companies operating in emerging capital markets, such as Indonesia.

Second, the majority of prior research tends to explore technological capital disclosure or corporate governance factors in isolation, without considering the combined effects of financial liquidity (as measured by the current ratio) and board characteristics (notably the presence of independent commissioners) as potential moderating variables. These governance and financial dimensions may critically influence how investors interpret technological capital disclosures and, consequently, affect firm valuation.

Third, existing studies often emphasize financial performance measures such as profitability or operational efficiency, with limited focus on firm value (market-based measures) as the main outcome. Moreover, the context of companies listed on the Jakarta Islamic Index (JII), which adhere to specific Sharia principles, remains underexplored despite its growing significance in global finance.

Therefore, this study aims to address these gaps by examining the influence of technological capital disclosure on firm value, while also investigating the moderating roles of liquidity and board of commissioners' independence in Sharia-compliant manufacturing companies listed on the JII during the period 2019–2023. By integrating these elements, the research contributes new insights into how technology-related disclosures interact with corporate governance and financial health to shape investor perceptions and firm valuation in emerging markets.

3. Methodology

The research design for this study is quantitative and employs a panel data approach to explore the impact of technological capital, the current ratio, and the board of commissioners on a company's Price to Book Value (PBV). This design allows for the analysis of both time-series and cross-sectional data across multiple companies over a period of five years (2019–2023). Below is an explanation of the research methods, the rationale for their selection, and how they align with the study's objectives.

3.1 Data Collection

This research draws on data from the Indonesia Stock Exchange (IDX), specifically using annual reports and financial statements of companies. These datasets are considered secondary data as they have already been publicly disclosed. The sample for this study was selected using a purposive sampling technique, which involves choosing companies based on specific criteria that align with the research objectives.

The selection criteria for the sample are as follows:

First, the companies must have consistently available and complete financial statements for each year within the observation period, from 2019 to 2023.

Second, the companies must not have recorded any net losses or negative equity during this period to ensure their financial stability and viability.

Third, all financial reports must be denominated in Indonesian Rupiah (IDR) to maintain consistency in data values, enabling valid comparisons.

Fourth, the companies must have been in operation for over five years and be included in the Jakarta Islamic Index (JII) to ensure they have an established presence in the Indonesian Islamic capital market.

After applying these criteria, 16 companies were identified and selected as the research sample. The study employs a quantitative approach, integrating time-series data spanning five consecutive years (2019–2023) with cross-sectional data from individual companies. This panel data structure allows for a more detailed analysis of the relationships between the variables. All data processing and analysis were carried out using EViews version 10, a statistical software package offering various tools for testing econometric models and generating outputs relevant for hypothesis testing.

The independent variable in this study is technological capital disclosure, which includes aspects such as technological adaptation and the technological educational background of the board of directors as reported in the company's annual reports. This concept is considered a novel element in the research, as previous studies have predominantly measured technological capital through IT expenditure budgets. [12] The implementation of blockchain technology [13] The implementation of Artificial Intelligence (AI) [14]. To measure this, two approaches were used. First, a score was assigned to each company based on the disclosure of technology adaptation results and the technological background of the board members. Second, the sum of these scores was divided by the established cumulative score. A score of 0 was given if the item was not disclosed, 1 if it was disclosed briefly, and 2 if it was disclosed in more detail. The established cumulative score was 3. Technology adaptation results refer to technologies developed specifically for the company's internal needs, which differ from the disclosure of information systems and networks included within intellectual capital.l [15]. Some of the adaptation technologies that have shown significant impact include 3D printing. [16] Artificial Intelligence [13] and blockchain [13]. The second element disclosed in this study is the technological educational background of the board of directors. It is important to note that this element differs from the concept of intellectual capital, as this research specifically considers only technological or engineering education, without taking into account the level of education, whether it be undergraduate, master's, or doctoral. Examples of educational backgrounds included in this category are food technology, information technology, electrical engineering, and similar fields. Previous studies have also shown that CEOs with a technical educational background are better able to manage investments due to a deeper understanding of technological trends, the ability to identify the company's technological needs, and the capacity to recruit skilled technical employees and foster more effective technological collaborations. [17]

The Current Ratio is a financial metric used to assess a company's ability to meet its short-term liabilities as they become due, using its available current assets. In other words, the Current Ratio indicates the extent to which a company's current assets can cover its total current liabilities.[18]

The Board of Commissioners is measured by the number of internal and external members. According to Rikumahu (2017), the size of the board of commissioners is determined by the total number of board members in a company. The size of the board of commissioners is calculated using the following formula: Board Size = = ΣBoard Members[19]

Firm value refers to a company's performance, as reflected by its stock price, which is determined through market demand and supply. Investment opportunities enhance firm value by signaling positive prospects for the company's future growth. Firm value is often represented by the stock price, where a higher stock price translates into higher returns for investors, indicating a more valuable company and aligning with its goal of maximizing shareholder wealth. This study utilizes the Price to Book Value (PBV) ratio.

3.2 Analysis Techniques

This study adopts a quantitative approach by integrating time-series data for five consecutive years (2019–2023) and cross-sectional data from the selected companies, thereby forming a panel data structure. This approach allows for a comprehensive analysis of relationships between variables across time and across companies.

The key independent variables in the study are:

Technological Capital Disclosure (TECH): This includes aspects such as the adaptation of new technologies (e.g., blockchain, artificial intelligence) and the technological education background of the board of directors.

Current Ratio (CR): This is a financial metric used to assess the company's ability to meet its short-term liabilities.

Board of Commissioners: The size of the board, measured by the total number of internal and external members.

The dependent variable is Firm Value, as measured by the Price to Book Value (PBV) ratio, which reflects a company's performance and growth prospects based on its market value.

The regression model used in this study is:

$PBVit = \alpha + \beta 1 TECHit + \beta 2 CRit + \beta 3 KOMit + \epsilon$ .....[1]

Explanation:

PBV = Price to Book Value for company i in period t

TECH = Disclosure of technological capital for company i in period t

CR = Current Assets / Current Liabilities

Board of Commissioners =Σ $Board\ Members$

This equation illustrates the relationship between the disclosure of technological capital, the current ratio (CR), and the board of commissioners with the firm's Price to Book Value (PBV), which will be further analyzed in this study. [14]

All data processing and analysis were conducted using EViews version 10, a widely used econometric software. This software offers a range of tools for model estimation, hypothesis testing, and output generation.

3.3 Validation

Several steps were taken to ensure the reliability and validity of the data and the results:

a. Descriptive Statistics: Descriptive statistics were computed first to provide an overview of the

data. This process allowed for the identification of any extreme values or anomalies in the dataset.

b. Multicollinearity Check: To ensure that the independent variables are not highly correlated with each other, the Variance Inflation Factor (VIF) was computed for each variable. A VIF above a certain threshold (typically 10) would indicate a potential multicollinearity issue.
c. Normality Testing: The residuals from the regression models were checked for normality using tests like Shapiro-Wilk or Jarque-Bera. This is important because non-normally distributed residuals could impact the validity of the regression results.
d. Heteroskedasticity Test: To detect any potential issues with unequal variances of the residuals (heteroskedasticity), tests such as Breusch-Pagan or White tests were employed. If heteroskedasticity was detected, robust standard errors would be used.
e. Model Selection: The appropriateness of the fixed effects versus random effects model was tested using the Hausman test. This test helps in deciding the model specification that provides unbiased and consistent estimates for panel data.
f. Reliability of Data: The secondary data collected from publicly available financial reports and annual disclosures is considered highly reliable, as it is sourced from reputable institutions like the IDX and publicly audited by accounting firms. This ensures consistency and transparency across the dataset.
g. Robustness Checks: To ensure the robustness of the findings, the study tested alternative model specifications and measurement methods for the variables. Any deviations or variations in results across different models were noted, ensuring the robustness of the conclusions drawn.

By employing these validation techniques, this study ensures the accuracy, consistency, and reliability of its findings. The combined use of multiple tests and methods strengthens the credibility of the results and their relevance in addressing the research objectives.

4. Results and Discussion

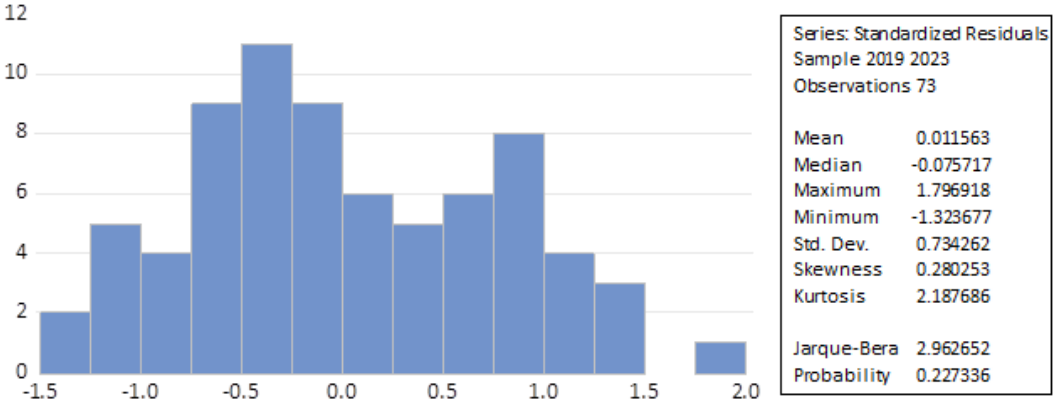
The first result of the testing is the model feasibility test, as shown in Table 2 below, with the best model selected being the Common Effect model.

Table 1. Model Test

Method	Test	Value	Result
Uji *Chow*	*Common effect vs Fixed effect*	Prob: 0.0000	*Fixed Effect*
Uji *Haustman*	*Fixed effect vs Random effect*	Prob: 0.3715	*Random Effect*
Uji *Langrange*	*Random effect vs Common effect*	Prob: 0.4041	*Random Effect*

Source: Data processed (2025)

Table 2. Normality Test



Source: Data processed (2025)

The results of the second test, which is the classical assumption test, show a Jacque-Bera value of 2.962652 > 0.1 and a probability of 0.227336 > 0.05, indicating that the residuals are normally distributed.

Table 3. Heteroscedasticity Test

Dependent Variable: RESAB
Method: Panel EGLS (Cross-section random effects)
Date: 05/16/25 Time: 16:27
Sample: 2019 2023
Periods included: 5
Cross-sections included: 15
Total panel (unbalanced) observations: 73
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_TECH	0.111753	0.161405	0.692378	0.4910
X2_CR	0.038336	0.054617	0.701910	0.4851
X3_KOM	-0.026672	0.030753	-0.867282	0.3888
C	0.665813	0.250020	2.663040	0.0096

R-squared	0.028722	Mean dependent var	0.167861
Adjusted R-squared	-0.013508	S.D. dependent var	0.226056
S.E. of regression	0.227973	Sum squared resid	3.586035
F-statistic	0.680131	Durbin-Watson stat	1.534500
Prob(F-statistic)	0.567182		

Unweighted Statistics

R-squared	-0.003993	Mean dependent var	0.610919
Sum squared resid	11.62885	Durbin-Watson stat	0.473200

Source: Data processed (2025)

The table above shows that the probability values for technological capital (X1), Current Ratio (X2), and Board of Commissioners (X3) are above 0.05, indicating that there is no issue of heteroscedasticity.

Table 4. Multicollinearity Test

	X1_TECH	X2_CR	X3_KOM
X1_TECH	1	0.1219646361824835	-0.05165255270284267
X2_CR	0.1219646361824835	1	0.2430134119791193
X3_KOM	-0.05165255270284267	0.2430134119791193	1

Source: Data processed (2025)

The table above shows no indication of multicollinearity in the model, as all correlation values

between the independent variables are well below the threshold of 0.80.

Table 5. Autocorrelation Test

DW = 1,534500
N = 73
DW Value Interpretation
≈ 2 No autocorrelation
< 1.5 Positive autocorrelation
> 2.5 Negative autocorrelation
1.5 – 2.5 Safe (no strong autocorrelation)
DW = 1.534500 falls between 1.5 and 2.5, indicating that there is no strong autocorrelation present.

Source: Data processed (2025)

The test results show a Durbin-Watson value of 1.534500 (<DL 1.50), indicating that there is no strong indication of autocorrelation.

Table 6. Hypothesis Testing

Dependent Variable: Y_PBV
Method: Panel EGLS (Cross-section random effects)
Date: 05/16/25 Time: 16:29
Sample: 2019 2023
Periods included: 5
Cross-sections included: 15
Total panel (unbalanced) observations: 73
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_TECH	0.715243	0.192704	3.711620	0.0004
X2_CR	0.136650	0.075580	1.808008	0.0750
X3_KOM	-0.014977	0.038461	-0.389422	0.6982
C	0.255393	0.366037	0.697726	0.4877

R-squared	0.228315	Mean dependent var	0.100078
Adjusted R-squared	0.194764	S.D. dependent var	0.290263
S.E. of regression	0.260787	Sum squared resid	4.692682
F-statistic	6.804914	Durbin-Watson stat	1.538303
Prob(F-statistic)	0.000438		
R-squared	0.064444	Mean dependent var	0.666904
Sum squared resid	38.82785	Durbin-Watson stat	0.185917

Source: Data processed (2025)

The interpretation of the results from the table above is as follows:

a. Coefficient Values:
   0.715243: This indicates that for every 1 unit increase in technological capital, the firm's value increases by 0.715243, or 71.5%, assuming all other variables remain constant.
   0.136650: This means that for every 1 unit increase in the Current Ratio (CR), the firm's value increases by 0.136650.
   -0.014977: This indicates that for every 1 unit decrease in the Board of Commissioners, the firm's value decreases by -0.014977.
b. Technological Capital shows a positive and significant impact on firm value, with a t-statistic

of 3.711620 and a p-value of 0.0004 (< 0.05). This suggests that investments in technology, such as business process digitalization, system automation, and the use of advanced software, contribute to improving firm performance and enhancing investor perceptions of the company's market value.

c. The Current Ratio (CR), as an indicator of short-term liquidity, has a t-statistic of 1.808008 and a p-value of 0.0750 (> 0.05). This result implies that CR does not have a significant effect on firm value during the observed period. In other words, the company's ability to meet short-term obligations does not appear to be a primary factor for investors when determining firm value in the Islamic stock market.
d. The Board of Commissioners does not have a significant impact on firm value, with a t-statistic of -0.389422 and a p-value of 0.06982 (> 0.05). This means that the presence of the Board of Commissioners, as a supervisory body, does not show a strong relationship with increased firm value in the context of Islamic companies.
e. The Adjusted R-squared value of 0.194764 indicates that this regression model explains approximately 19.5% of the variation in firm value, while the remaining variation is influenced by other variables not included in the model, such as profitability, ownership structure, company growth, or macroeconomic conditions.
f. Technological Capital is a strategic factor that significantly affects firm value for companies listed on the Jakarta Islamic Index from 2019 to 2023. Meanwhile, other internal factors, such as short-term liquidity and the presence of the Board of Commissioners, do not show a significant relationship with firm value in the context of the Indonesian Islamic stock market. This suggests that investors in the Islamic stock market are more responsive to aspects of technological innovation and efficiency than to traditional financial indicators or governance structures.

4.1 Key Findings

The analysis of the data provided several key findings:
Model Selection: Based on the model feasibility tests (Chow, Hausman, and Langrange tests), the Common Effect model was selected as the best model. This selection was made after comparing the fixed, random, and common effects models based on their p-values and overall performance.
Normality Test: The classical assumption test showed that the residuals are normally distributed, as indicated by a Jacque-Bera value of 2.962652 and a p-value of 0.227336 (> 0.05).
Heteroscedasticity: There was no issue of heteroscedasticity in the data, as the probability values for technological capital, current ratio (CR), and Board of Commissioners were all above 0.05.
Multicollinearity: No multicollinearity was found in the model, with all correlation values between the independent variables well below the threshold of 0.80, ensuring that each predictor is unique in its contribution to the model.
Autocorrelation: The Durbin-Watson statistic (DW = 1.534500) indicated no strong autocorrelation, as the value falls within the safe range of 1.5 to 2.5.

Hypothesis Testing:
Technological Capital had a positive and significant impact on firm value, with a coefficient of 0.715243 (a 71.5% increase in firm value for every unit increase in technological capital), a t-statistic of 3.711620, and a p-value of 0.0004 (< 0.05).
The Current Ratio (CR) did not have a significant effect on firm value, with a t-statistic of 1.808008 and a p-value of 0.0750 (> 0.05).
The Board of Commissioners showed no significant effect on firm value, with a t-statistic of -0.389422 and a p-value of 0.06982 (> 0.05).

The Adjusted R-squared value of 0.194764 indicated that the model explained approximately 19.5% of the variation in firm value.

4.2 Interpretation of Results

Technological Capital as a Key Factor:

The strong positive and significant relationship between technological capital and firm value indicates that investments in technology, such as digitalization, system automation, and the use of advanced software, play a critical role in improving company performance. This result aligns with the increasing importance of technological innovation in the global marketplace. Investors in the Islamic stock market appear to value technological efficiency, which enhances both company performance and market perceptions.

Current Ratio (CR):

Despite being a common financial metric, the Current Ratio (CR), a measure of short-term liquidity, was found to have no significant impact on firm value in the context of the Indonesian Islamic stock market. This suggests that investors may prioritize other indicators, such as growth prospects and innovation, over short-term liquidity when assessing firm value.

Board of Commissioners:

The Board of Commissioners, as a governance body, did not show a significant effect on firm value in this study. While corporate governance plays a crucial role in maintaining investor trust and transparency, it appears that, in the context of this research, it does not directly influence firm value. This may be because investors in the Islamic stock market focus more on technological advancements and business innovation rather than on traditional governance structures.

Model Interpretation:

The Adjusted R-squared value of 0.194764 suggests that other variables, such as profitability, ownership structure, and macroeconomic conditions, might influence firm value but were not included in the current model. Therefore, the findings highlight the importance of technological capital but also point out the need for further research to capture additional factors that might better explain variations in firm value.

Implications for Investors and Policymakers:

The findings underscore the significance of technological innovation in driving firm value in the Islamic stock market. This can guide investors to focus more on the technology strategies of companies when making investment decisions. Policymakers and corporate managers in the Islamic finance sector might also consider fostering technological advancements and digital initiatives to enhance market perception and firm performance. Furthermore, the minimal impact of financial indicators like the Current Ratio and corporate governance suggests that the investment landscape may be shifting towards an emphasis on innovation and technology.

In conclusion, the study reveals that technological capital is a crucial factor for enhancing firm value in the Islamic stock market, while traditional financial metrics and governance structures seem to have a lesser impact on investors' decisions. This aligns with the research objectives of investigating the relationship between technological capital, liquidity, governance, and firm value.

5. Discussion

This section interprets and analyzes the findings from the study, placing them within a broader context. It compares the results with existing research and acknowledges any limitations, while also suggesting areas for future exploration.

5.1 Comparison with Prior Research

The results of this study are consistent with some previous research, particularly regarding the significance of technological capital in driving firm value. ZI Pane, Y. Beng, and IC Wangsih's (2024) study on the benefits of technological capital disclosure emphasizes that companies which disclose technological investments attract greater investor interest and achieve higher market valuations. Similarly, the current study found that technological capital disclosure significantly impacts firm value, suggesting that investors in the Jakarta Islamic Index (JII) place substantial weight on technological innovation when evaluating company performance.

Moreover, Z. Pane and L. Romel's (2024) work, which explores the effect of technological capital disclosure on employee productivity, indirectly supports this study's findings. While the focus in the current research is on market valuation, both studies highlight the far-reaching effects of technological transparency—not just on internal operations (e.g., employee productivity) but also on investor perception and firm value.

However, unlike the studies of Wangsih et al. (2024), which did not consider moderating factors such as liquidity and governance, the current study introduces liquidity (Current Ratio) and board composition as moderating variables. This nuanced approach, integrating both technological and financial dimensions, adds to the literature by showing how the absence of significant impacts from liquidity and governance on firm value challenges traditional metrics' relevance in the modern business environment.

Interestingly, CEO narcissism, as explored by Z. Pane & L. Romel (2024), offers a contrasting perspective. While their study shows a psychological effect of technological capital on leadership behavior, the current study stays grounded in more tangible metrics like PBV and does not delve into psychological aspects. This distinction underscores the shift in the focus of research—moving away from leadership psychology toward more measurable market indicators in evaluating firm value.

5.2 Limitations

While this study offers valuable insights, it has several limitations that must be addressed in future research:

Sample Size: The sample size of 16 companies is relatively small, which limits the generalizability of the findings. A larger sample could provide more robust insights and allow for a more detailed analysis of industry-specific effects.

Limited Scope: The study only examines firms listed on the Jakarta Islamic Index (JII) in Indonesia, and the findings may not be directly applicable to other countries or regions. Technological adoption and market responses can vary significantly across different cultural, economic, and regulatory environments.

Other Variables: Although the study integrates key variables such as technological capital, liquidity, and board composition, other factors influencing firm value, such as profitability, ownership structure, macroeconomic conditions, and corporate culture, were not included. These factors could have an additional effect on firm value and should be considered in future models.

Technological Capital Definition: The measure of technological capital disclosure in this study, using a scoring system based on the level of disclosure in annual reports, is somewhat subjective. Future studies could consider more precise and quantifiable measures, such as R&D expenditure or patent filings, to gauge technological capital.

Board of Commissioners: The Board of Commissioners was found to have no significant impact on firm value in this study. However, this may be due to the specific context of the Indonesian Islamic market or the way governance is structured in the selected companies. Further

research may explore whether governance models that emphasize active involvement and strategic decision-making could yield different results.

5.3 Future Research

Based on the limitations and findings of this study, several potential areas for future research are outlined:

a. Expand the Sample Size: Future studies could expand the sample size to include a larger number of companies, both from the JII and other indexes, to verify whether the results hold in other contexts. A more diverse sample would enhance the generalizability of the findings.
b. Explore Regional Comparisons: A cross-country comparison of firms listed on Islamic stock exchanges (e.g., in Malaysia, Saudi Arabia, and other Islamic financial markets) could provide insights into how technological capital and corporate governance are valued across different Islamic markets. This would also allow for a better understanding of cultural and regulatory differences.
c. Incorporate Additional Variables: Future research could integrate other financial and non-financial factors, such as profitability, ownership concentration, or economic conditions, to provide a more comprehensive view of the factors influencing firm value. These factors may provide a deeper understanding of investor behavior.
d. Enhance Measurement of Technological Capital: Future research could improve the measurement of technological capital by considering more objective indicators, such as the total amount of investment in research and development (R&D), patents, or technology implementation projects. A multidimensional approach could provide richer insights into the role of technology in firm value.
e. Investigate Governance Impact: While this study finds no significant impact of the Board of Commissioners on firm value, further research could explore alternative governance models or focus on boards that have more active participation in strategic decision-making, especially in tech-driven firms. A deeper analysis of governance structure might reveal new insights into its role in shaping firm performance.
f. Behavioral Perspectives: As seen in the study by Z. Pane & L. Romel (2024) on CEO narcissism, future research could also explore psychological or behavioral factors, such as CEO characteristics, leadership styles, or innovation adoption, and their effects on technological capital and firm value.
g. Longitudinal Studies: A longitudinal study spanning multiple decades could offer deeper insights into how technological capital's role in firm value evolves over time, especially as technology continues to advance at an exponential rate.

6. Conclusion

This study provides valuable insights into the relationship between technological capital disclosure, liquidity, corporate governance, and firm value in companies listed on the Jakarta Islamic Index. The findings suggest that technological capital—specifically investments in digitalization, automation, and advanced technologies—has a significant and positive impact on firm value, underlining the growing importance of technological innovation in today's business environment.

On the other hand, liquidity (Current Ratio) and corporate governance (Board of Commissioners) were found to have no significant effect on firm value, which challenges traditional financial and governance metrics that have typically been relied upon by investors. This

may reflect a shift in investor priorities, with a stronger focus on technological advancements and future growth potential.

Overall, the study contributes to a better understanding of the factors driving firm value in the context of the Islamic stock market and provides a foundation for future research exploring the intersections of technology, corporate governance, and financial performance in emerging markets.

7. Recommendation

Summary of Main Points:

This study investigates the impact of technological capital disclosure, liquidity (current ratio), and corporate governance (Board of Commissioners) on firm value in companies listed on the Jakarta Islamic Index (JII) between 2019 and 2023. A quantitative approach using panel data and regression analysis was employed to explore the relationship between these factors.

Key Findings:

a. Technological Capital Disclosure has a significant positive impact on firm value, indicating that technological innovation drives market performance.
b. Current Ratio (CR) does not significantly affect firm value, suggesting that liquidity is less important for investors in the Islamic stock market.
c. The Board of Commissioners does not show a significant effect on firm value, implying that governance structures may not be as influential as technology.

Methodology:

The research uses panel data from 16 companies over 5 years (2019-2023). The relationship between technological capital, liquidity, corporate governance, and firm value was analyzed using EViews software.

Implications:

a. For investors, the study highlights the importance of focusing on companies' technological innovations as they significantly impact firm value.
b. For corporate managers, investing in technological advancements is key to improving market valuation.
c. For policymakers, supporting technological initiatives can enhance the competitiveness of Sharia-compliant companies.

Contribution to the Field:

This study contributes to the Islamic finance literature by examining the role of technological capital in emerging markets. It introduces a novel framework combining Signaling Theory and Disruptive Innovation Theory, offering fresh insights into the relationship between innovation and firm value in the Jakarta Islamic Index.

Appendix

Dependent Variable: Y_PBV
Method: Panel EGLS (Cross-section random effects)
Date: 05/16/25 Time: 16:29
Sample: 2019 2023
Periods included: 5
Cross-sections included: 15
Total panel (unbalanced) observations: 73
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_TECH	0.715243	0.192704	3.711620	0.0004
X2_CR	0.136650	0.075580	1.808008	0.0750
X3_KOM	-0.014977	0.038461	-0.389422	0.6982
C	0.255393	0.366037	0.697726	0.4877

R-squared	0.228315	Mean dependent var	0.100078
Adjusted R-squared	0.194764	S.D. dependent var	0.290263
S.E. of regression	0.260787	Sum squared resid	4.692682
F-statistic	6.804914	Durbin-Watson stat	1.538303
Prob(F-statistic)	0.000438		

R-squared	0.064444	Mean dependent var	0.666904
Sum squared resid	38.82785	Durbin-Watson stat	0.185917

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